

(b)  $\langle 110 \rangle$   
 $\langle 120 \rangle$

<120> NUCLEIC ACID FRAGMENTS FOR THE IDENTIFICATION OF  
DECHLORINATING BACTERIA

<140>

<141>

<150> 60/129,511

<151> 1999-04-15

<160> 60

<170> Microsoft Office 97

<210> 1

$\langle 211 \rangle$  24

<212> DNA

<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 1

<400> 1  
attttctagc gagactgccc cgcg

 $\langle 210 \rangle \quad 2$ 

$\langle 210 \rangle$	2
$\langle 211 \rangle$	1377

<212> DNA

<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 2

[illegible] $\langle 210 \rangle$  3

<211> 1378

<212> DNA

<212> DNA  
<213> Dehalococcoides ethenogenes

**SECRET**

<400> 3  
 gatgaacgct agcggcgctgc cttatgcatg caagtcgaac ggtcttaagc aattaagata 60  
 gtggcgaacg ggtgagtaac gcgtaagtaa cctacctcta agtgggggat agcttcggga 120  
 aactgaagggt aataccgcat gtggtgggcc gacataagtt ggttactaa agccgtaagg 180  
 tgccttggtga ggggcttgcg tccgattagc tagttggtgg ggtaacggcc taccaaggct 240  
 tcgatcggtg gcttggtctg agaggatgat cagccacact gggactgaga caggcccag 300  
 actcctacgg gaggcagcag caaggaatct tgggcaatgg gcgaaagcct gaccagcaa 360  
 cgccgcgtga gggatgaagg ctctcggtt gtaaacctct tttcacagg aagaataatg 420  
 acggtacctg tgggaataagc ttcggctaac tacgtgccag cagccgcggt aatacgtagg 480  
 aagcaagcgt tatccggatt tattgggctg aaagtgaagc taggtggtct ttcaagttgg 540  
 atgtgaaatt tccgggctta accgggacgt gtcattcaat actggtggac tagagtacag 600  
 caggagaaaa cggaattccc ggtgtagtgg taaaatgcgt agatatacggg aggaacacca 660  
 gaggcgaagg cggttttcta ggttgctact gacactgagg ctcgaaagcg tggggagcga 720  
 acagaattag atactctggt agtccacgac ttaaactatg gacactaagt ataggaggta 780  
 tcgacctctc ctgtgcgaa gctaacgctt taagtgtccc gcctggggag tacggtcgca 840  
 aggctaaaaa tcaaaggat tgacgggggc ccgcacaagc agcggagcgt gtggtttaat 900  
 tcgatgctac acgaagaacc ttaccaagat ttgacatgca tgaagtagtg aaccgaaagg 960  
 gaaacgacct gttaagtcag gaggttgcac aggtgctgca tggtgtcgt cagctcgtgc 1020  
 cgtgaggtgt ttggttaagt cctgcaacga gcgcaaccct tgttgctagt taaattttct 1080  
 agcgagactg ccccgcgaaa cggggaggaa ggtggggatg acgtcaagtc agcatggcct 1140  
 ttatatcttg ggctacacac acgctacaat ggacagaaca ataggttgca acagtgtgaa 1200  
 ctggagctaa tcctcaaagc tgcctcagtt cggattgca ggctgaaacc cgctgcatg 1260  
 aagttggagt tgctagtaac cgcataatcag caaggtgcgg tgaatacgtt ctcgggcctt 1320  
 gtacacaccg cccgtcacgt catgaaagcc ggtaacactt gaagtcgatg tgccaacc 1378

<210> 4  
 <211> 1377  
 <212> DNA  
 <213> Dehalococcoides ethenogenes

<400> 4  
 gatgaacgct agcggcgctgc cttatgcatg caagtcgaac ggtcttaagc aattaagata 60  
 gtggcgaacg ggtgagtaac gcgtaagtaa cctacctcta agtgggggat agcttcggga 120  
 aactgaagggt aataccgcat gtggtgggcc gacataatgtt ggttactaa agccgtaagg 180  
 cgcttggtga ggggcttgcg tccgattagc tagttggtgg ggtaatggcc taccaaggct 240  
 tcgatcggtg gctggtctga gaggatgatc agccacactg ggactgagac acggcccaga 300  
 ctccctacggg aggcagcagc aaggaatctt gggcaatggg cgaaagcctg acccagcaac 360  
 gccgcgtgag ggatgaaggc tttcgggttg taaacctctt ttcataaggga agaataatga 420  
 cggtaacctgt ggaataagct tcgggctaact acgtgccagc agccgcggta atacgttaga 480  
 agcaagcgtt atccggattt attgggcgta aadtgagcgt aggtggtctt tcaagttgga 540  
 tgtgaaattt cccggcttaa ccgggacgag tcaattcaata ctggtggact agagtacagc 600  
 aggagaaaaa ggaattcccc gtgtagtggg aaaatgcgta gatatacggga ggaacaccag 660  
 aggcgaaggc ggttttctag gttgtcactg aactgagggc tcgaaagcgt ggggagcga 720  
 cagaattaga tactctggta gtccacgcct taaactatgg acactaggtg tagggagtat 780  
 cgacctctc tgtgcccgaag ctaacgcttt aagtggtccc cctggggagt acggtcgcaa 840  
 ggctaaaact caaaggaatt gacgggggcc cgcacaagca gcggagcgtg tggtttaatt 900  
 cgatgctaca cgaagaacct taccaagatt tgacatgcat gtagtagtga actgaaagg 960  
 gaacgacctg ttaagtcagg aacttgcaac ggtgctgcat ggctgtcgtc agctcgtgcc 1020  
 gtgaggtgtt tgggttaagtc ctgcaacgag cgcaaccctt gttgctagtt aaattttcta 1080  
 gcgagactgc cccgcgaaac ggggagggaag gtggggatga cgtcaagtca gcatggcctt 1140  
 tatatcttgg gctacacaca cgctacaatg gacagaacaa taggttgcaa cagtgtgaac 1200  
 tggagctaat ccccaaagct gtccctcagtt cggattgcag gctgaaacc cctgcatga 1260  
 agttggagtt gctagtaacc gcataatcagc atggtgcggt gaatacgttc tcgggccttg 1320  
 tacacaccgc ccgtcacgtc atgaaagccg gtaacacttg aagtcgatgt gcccaacc 1377

<210> 5  
 <211> 1377  
 <212> DNA  
 <213> Dehalococcoides ethenogenes

<400> 5  
 gatgaacgct agcggcgctgc cttatgcatg caagtcgaac ggtcttaagc aattaagata 60  
 gtggcgaacg ggtgagtaac gcgtaagtaa cctacctcta agtgggggat agcttcggga 120  
 aactgaagggt aataccgcat gtggtgggcc gacataatgtt ggttactaa agccgtaagg 180



cggtacctgt	ggaataagct	tcggctaact	acgtgccagc	agccgcggta	atacgtaggg	480
aagcaagcgt	tatccggatt	tattgggcgt	aaagtgaagc	taggtggtct	ttcaagttgg	540
atgtgaaatt	tcccggctta	accgggacgt	gtcattcaat	actgttggac	tagagtacag	600
caggagaaaa	cggatttccc	ggtgtagtgg	taaaatgcgt	agatatcggg	aggaacacca	660
gaggcgaagg	cggttttcta	ggtgtgctact	gacactgagg	ctcgaaagcg	tggggagcga	720
acagaattag	atactctggt	agtccacgcc	ttaaactatg	gacactaggt	atagggagta	780
tcgaccctct	ctgtgccgaa	gctaacgctt	taagtgtccc	gcctggggag	tacggtcgca	840
aggctaaaa	tcaaaggaa	tgacgggggc	ccgcacaagc	agcggagcgt	gtggtttaat	900
tcgatgctac	acgaagaact	taccaagatt	tgacatgcat	gaagtagtga	accgaaaggg	960
aaacgacctg	ttaagtcagg	agtttgca	ggtgctgcat	ggctgtcgtc	agctcgtgcc	1020
gtgaggtggt	gggttaagtc	ctgcaacgag	cgcaaccttg	ttgctagtta	aattttctag	1080
cgagactagc	gagactgccc	cgcgaaacgg	ggaggaaggt	ggggatgacg	tcaagtcagc	1140
atggccttta	tatcttgggc	tacacacacg	ctacaatgga	cagaacaata	ggttgcaaca	1200
gtgtgaactg	gagctaatcc	ccaaagctgt	cctcagttcg	gattgcaggc	tgaaaccgcg	1260
ctgcatgaag	ttggagtgtg	tagtaaccgc	atatcagcaa	ggtgcggtga	atacgttctc	1320
gggccttgta	cacacggccc	gtcacgtcat	ganagccggt	aacacttgaa	gtcgatgtgc	1380
caaccgcaag	gaggcagtcg	ccgaggggtg	gactggtaat	tgggacgaag	tcgtaacaag	1440
gta						1443

<210> 8  
 <211> 47  
 <212> DNA  
 <213> Dehalococcoides ethenogenes

<220  
 <221> unsure  
 <222> (5)  
 <223> R=A/G

<220  
 <221> unsure  
 <222> (11)  
 <223> Y=C/T

<220  
 <221> unsure  
 <222> (18)  
 <223> W=A/T

<220  
 <221> unsure  
 <222> (21)  
 <223> Y=C/T

<220  
 <221> unsure  
 <222> (28)  
 <223> Y=T/C

<220  
 <221> unsure  
 <222> (37)  
 <223> Y=T/C

<220  
 <221> unsure  
 <222> (42)  
 <223> Y=C/T

<400> 8  
 tgtgntgggc ngacatangt nggttcanta aagccgnaag gngcttg

47

<210> 9  
 <211> 20

001110 0001550

<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 9 20  
aagtcgaacg gtcttaagca

<210> 10  
<211> 20  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 10 20  
cgtcattatt cttccctgtg

<210> 11  
<211> 21  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 11 21  
gggaaacgac ctgttaagtc a

<210> 12  
<211> 22  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 12 22  
ggattagctc cagttcacac tg

<210> 13  
<211> 20  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 13 20  
aaatttaact agcaacaagg

<210> 14  
<211> 19  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 14 19  
ggagtatcga ccctctctg

<210> 15  
<211> 18  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 15 18  
gggagtatcg accctctc

<210> 16  
<211> 18  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 16 18  
agtgaaccga aaggga

<210> 17  
<211> 21

<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	17	21
	gggttgtaaa cctcttttca c	
<210>	18	
<211>	20	
<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	18	20
	gtagcttcg gcacagagag	
<210>	19	
<211>	20	
<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	19	20
	tcagtgacaa cctagaaaac	
<210>	20	
<211>	17	
<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	20	17
	gatgaacgct agcggcg	
<210>	21	
<211>	18	
<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	21	18
	gtgccttatg catgcaag	
<210>	22	
<211>	21	
<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	22	21
	aataggttgc aacagtgtga a	
<210>	23	
<211>	22	
<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	23	22
	aatggacaga acaataggtt gc	
<210>	24	
<211>	21	
<212>	DNA	
<213>	Dehalococcoides ethenogenes	
<400>	24	21
	ggcacatcga cttcaagtgt t	
<210>	25	
<211>	20	

<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 25  
gggttgtaaa cctcttttca

20

<210> 26  
<211> 20  
<212> DNA  
<213> Dehalococcoides ethenogenes

<220  
<221> unsure  
<222> (12)  
<223> W=A OR T

<400> 26  
taaccgggac gwgatcattca

20

<210> 27  
<211> 19  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 27  
gagtacagca ggagaaaac

19

<210> 28  
<211> 21  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 28  
cctccttgcg gttggcacat c

21

<210> 29  
<211> 19  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 29  
ggcagtctcg ctgaaaaat

19

<210> 30  
<211> 51  
<212> DNA  
<213> Dehalococcoides ethenogenes

<220  
<221> unsure  
<222> (3)  
<223> W=A/T

<220  
<221> unsure  
<222> (14)  
<223> M=A/C

<220  
<221> unsure  
<222> (22)  
<223> R=A/G

[illegible]

~~<400> 30  
tqwagtagtg aachgaaagg graacgacct gttaagtcag garmttgcac a~~

```
<210> 31
<211> 18
<212> DNA
<213> Dehalococcoides ethenogenes
```

18

<400> 32  
attttctacg cgagactagc gagactg

27

```
<210> 33
<211> 1542
<212> DNA
<213> Dehalococcoides ethenogenes
```

[illegible]

$\langle 210 \rangle$	34
$\langle 211 \rangle$	49



<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 34  
aacccttggt gctagttaaa ttttctagcg agactgcccc gcgaaacgg

49

<210> 35  
<211> 43  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 35  
tgtgatgggc tgacataagt cggttcatta aagccgcaag gtg

43

<210> 36  
<211> 43  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 36  
caccttgagg ctttaataag cggacttatg tcagcccatc aca

43

<210> 37  
<211> 43  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 37  
tgtggtgggc cgacataagt tggttcacta aagccgtaag gtg

43

<210> 38  
<211> 43  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 38  
caccttacgg ctttagtgaa ccaacttatg tcggcccaac aca

43

<210> 39  
<211> 43  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 39  
tgtggtgggc cgacatatgt tggttcacta aagccgtaag gcg

43

<210> 40  
<211> 43  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 40  
cgccttacgg ctttagtgaa ccaacatatg tcggcccacc aca

43

<210> 41  
<211> 36  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 41  
agttaaattt tctagcgaga ctgccccgcg aaacgg

36

<210> 42  
<211> 36

<212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 42  
 ccgtttcgcg gggcagtcctc gctagaaaat ttaact  
 <210> 43  
 <211> 29  
 <212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 43  
 agttaaat tctagcgaga ctgccccgc  
 <210> 44  
 <211> 29  
 <212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 44  
 gcggggcagt ctcgctagaa aatttaact  
 <210> 45  
 <211> 30  
 <212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 45  
 ccttggtgct agttaaat tctagcgaga  
 <210> 46  
 <211> 30  
 <212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 46  
 tctcgctaga aaatttaact agcaacaagg  
 <210> 47  
 <211> 32  
 <212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 47  
 gacatgcatg aagtagtgaa ccgaaagggg aa  
 <210> 48  
 <211> 32  
 <212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 48  
 tttccctttc gggttactac ttcagcatg tc  
 <210> 49  
 <211> 30  
 <212> DNA  
 <213> Dehalococcoides ethenogenes  
 <400> 49  
 ggacgtgtca ttcaatactg ttggactaga  
 <210> 50  
 <211> 30

36

29

29

30

30

32

32

30

<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 50  
tctagtccaa cagtattgaa tgacacgtcc

30

<210> 51  
<211> 32  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 51  
tgttggacta gagtaacgca ggagaaaacg ga

32

<210> 52  
<211> 32  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 52  
tccgttttct cctgctgtac tctagtccaa ca

32

<210> 53  
<211> 29  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 53  
ggcttaaccg ggacgtgtca ttcaatact

29

<210> 54  
<211> 29  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 54  
agtattgaat gacacgtccc ggtaagcc

29

<210> 55  
<211> 37  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 55  
aatttcccgg cctaaccggg acgtgtcatt caatact

37

<210> 56  
<211> 37  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 56  
agtattgaat gacacgtccc ggtaagccg ggaaatt

37

<210> 57  
<211> 31  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 57  
tgttaagtca ggagtttgca caggtgctgc a

31

<210> 58  
<211> 31

Sub B1

<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 58  
tgcagcaact gtgcaaactc ctgacttaac a

31

<210> 59  
<211> 31  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 59  
cgcgtaagta acctacctct aagtggggga t

31

<210> 60  
<211> 31  
<212> DNA  
<213> Dehalococcoides ethenogenes

<400> 60  
atcccccaact tagaggtagg ttacttacgc g

31

001110-88811100